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The Effects of Fare-Free Public Transport: A Lesson from Frýdek-Místek (Czechia)

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Received: 23 August 2020; Accepted: 30 October 2020; Published: 2 November 2020

Abstract: The fare-free public transport policy (FFPT), the characteristic feature of which is abolishing fares in public transport, influences the transport system in favour of one means of transport. By joining the academic disputes over the outcomes of the FFPT policy, the aim of this paper is to understand the effects of the FFPT on overall mobility strategies and on the dynamics of the transport system where the policy is implemented. To do so, the paper is analysing a concrete example of the FFPT practice in Frýdek-Místek (Czechia) by conducting surveys with the residents and interviews with the city planning authorities. The results show that the FFPT influences mobility strategies and dynamics in the given transport system, which imprints in an increased use of public transport. However, the FFPT does not represent a universal tool of urban and transport planning and its implementation into practice should take place in synergy with other transport (dis)incentives.

Keywords: fare-free public transport policy; FFPT; mobility; public transport planning; Czechia

1. Introduction

The undergoing changes as increasing mobility and the growing transport dependency are what characterises contemporary society. In return, various urban and rural areas face many transport-related problems arising from the necessity to move in order to participate in various day-to-day activities. Within academia, as well as various NGOs, public authorities, and civic society have come to a consensus and by following the paradigm of sustainable mobility [1–3] agree that such a development will be hardly sustainable in the future, therefore, action has to be taken to break the current transport patterns [4,5]. The question of which steps should be taken to support the sustainable development and challenge various transport-related problems, like landscape fragmentation, negative externalities related to the car usage (e.g., greenhouse emission, noise pollution, traffic congestions, car accidents) [1,6,7] or social exclusion caused by not possessing an individual means of transport, the car in particular, and various level of public transport accessibility [8,9], is still a subject of broader disputes [2,3,5,7,10,11]. It is also well recognised in various policy papers and development strategies, for example, the Commission Staff Working Document, Accompanying the White Paper-Roadmap to a Single European Transport Area–Towards a competitive and resource-efficient transport system [12].

To address the issues mentioned above, connected with the ongoing changes in society, like general growing transport dependency, which is derived from the excessive use of cars, policy planners and public authorities have at their disposal various instruments to formulate policies and implement a transport and urban strategy inducing societal changes and supporting the paradigm of sustainable mobility. The transport and urban research have identified that those instruments could be used to enhance (1) the shift from the private cars to the public transport, shared-mobility services, or non-motorised means of transport, (2) urban and transport planning (e.g., establishing zero-emission and pedestrian zones, designing transport infrastructure to reduce the speed of traffic and increase

the safety), and (3) adoption of technological innovations (e.g., to modernise the fleet of the public transport with electric buses, decarbonisation of the transport sector) [7,13–15].

The fare-free public transport policy (FFPT) is one of the instruments which municipalities are implementing in order to follow the sustainable mobility [16,17]. The term FFPT, the core feature of which is abolishing fares in public transport, was firstly coined at the end of 1960 [16–20] as a part of the broader debate how different elements could potentially be a trigger of the modal shift from private cars to public transport, for example, the price of petrol and fares [20,21]. From that time, the academic disputes over FFPT have identified what the main drivers are that have already made more than 90 municipalities around the globe implement the fare-free public transport policy fully [16,22,23]. FFPT research has also addressed the various economic [24–31], environmental [16,22,32], socio-spatial [33–39], and political [40–43] implications of the FFPT implementation, as well as exploring the imprint of the abolished fares on travel behaviour and mobility strategies [31,35,44–46].

The main aim of this article is to examine the effects of the FFPT policy in Frýdek-Místek (Czechia). By doing so, this article contributes to the FFPT debate, focusing particularly on the issues connected with the effects of FFPT on mobility strategies and on the dynamics in the transport system where the fare-free public transport policy is implemented, which is the added value of the research. The reason this paper explores the imprints of FFPT on the mobility strategies and its impact on transport development is the fact that the results of the ongoing FFPT debate differ. Thus, shedding more light on the problematic elements of the FFPT influence on mobility strategies and urban transport dynamics will help us to fill the gaps in the prevailing FFPT research and to understand whether the fare-free public transport policy is an efficient tool to increase public transport ridership and reduce extensive traffic flows or, as proposed by [17,25,37], rather an urban welfare policy advocating social justice by providing accessibility among urban poor. Additional benefits of such a local scale study are to provide a deeper understanding of the FFPT which is beneficial not only for the local institutions but could enhance a more effective decision-making process at a global scale [32,43,47].

In doing so, this paper provides an analysis of a concrete example of the FFPT practice in Frýdek-Místek (Czechia), which could be achieved by conducting surveys with the residents and interviews with the city planning authorities to fulfil the main aim of the paper, which is to understand the effects of FFPT on mobility strategies and on the dynamic of the transport system where the policy is implemented. After the 1. Introduction, 1.1 The Changing Rationale of the FFPT Experiments is provided, which is followed by the description of 2.1 The Study Area, 2.2 Methodology, 3. Results, 4. Conclusions and closed with 5. Discussion.

The Changing Rationale of the FFPT Experiments

As mentioned above, the beginning of the fare-free public transport experiments dates back to the end of 1960s [17–20]. On the whole, ongoing FFPT research has defined the main rationale underpinning various FFPT practices [16,17,22]. However, the fare-free public transport policy was initially seen as a tool for attracting car-drivers in order to reduce the excessive use of cars and to increase the public transport ridership [18–20,24,27,31]. The early investigations of the impact of the FFPT policy on the modal shift conclude that greater potential to reduce the car-traffic would be increased prices of petrol [21] rather than abolish fares in public transport. Such conclusions partially reflected the tradition of the neoclassical paradigm, which in its nature neglects the complex issues of travel behaviour [48]. This steam of criticism was later supported by the findings of [22,23,34,44,45,49] who have acknowledged that the adoption of FFPT, on one hand, increases the patronage of the public transport, but such an increase is caused by additional mobility, which the FFPT policy generates. This additional mobility, sometimes labelled as "useless" [17,49], is caused by the substitution of trips which would be covered on foot or by bike. The term "useless" does not refer that such trips do not have any use, but it refers to the fact that the FFPT policy is not affecting, for example, the shift of car drivers to public transport. However, the serious weakness of this argument is the methodological inconsistency of the previously mentioned papers, as they have all pointed out that the ridership increase in the

public transport occurs mainly due to attracting former public transport users, pedestrians, or cyclists, with car-drivers being in the minority. The research results of this study shrink this literature gap by uncovering the influence of FFPT adoption in the study area. To conclude this part, which addresses the pro-ecological rationale of the FFPT implementation resulting in the reduction of the car-use with its negative externalities, it has to be acknowledged that the (un)effectivity of the fare-free policy cannot be studied as a standalone, but in a broader context of the socio-spatial urban development and travel behaviour [22,32,39,41–43,50,51].

Certain studies have noticed municipalities which are implementing the FFPT policy not in order to address the environmental issues linked with the growing use of cars and decreasing public transport ridership, but as a strategical tool reforming the financing of the service of public transport [27,35,39,41] or to challenge the socio-spatial development issues in metropolitan areas [38]. Reforming the financing of the public transport results from avoiding the costs related with the tickets agenda (e.g., accounting, printing, maintaining or modernising the equipment, ticket controls), which could generate savings and decrease the operational expenses especially in a small system of public transport [27,52], and recently those facts underpinned the decision to go fare-free in Olympia (USA) [53]. The fare-free public transport policy is also used to address the issues of a growing demand for a sufficient public transport network in dynamically developing metropolitan areas or hinterlands of sub-regional centres in Poland [38]. FFPT implementation is part of a broader developing strategy of public transport (e.g., modernization of bus fleet) there, which is aimed at creating an integrated network and ease the transportation within the area. The study which investigated the case of FFPT in Tallinn has concluded that providing the fare-free public transport rides only to the residents of Tallinn made its footprint on the increase in the municipal tax income by motivating the registration of inhabitants as residents of Tallinn [34,43].

Based on questionable benefits of the FFPT towards supporting the sustainable development in terms of the car-use reduction, for which neglecting the issues of politically embodied transport poverty and inequality is typical [10,54,55], new rationale for FFPT adoption emerged recently. This new rationale understands FFPT not as a tool of the sustainable development to reduce negative externalities of excessive use of cars, but as an urban welfare policy which is opening our urbanities equally to everyone, no matter their income, race, gender, ethnicity, social status, place of residence, or car possession [16,25,33,41,43]. In particular, this is a case of small peripheral settlements in Poland, which are unattractive for private carriers due to financial instability. The FFPT adoption in such locations is a tool answering how to provide basic accessibility to those who do not own a car [38]. It brings FFPT into the debate of whether the service of public transport is (not) a common good [25,56,57] and whether it should be fully subsidised or based on the liberal principles of the market economy [28,29,58,59]. The aforementioned debate gained particular momentum during the COVID-19 pandemic, as noticed by Kębłowski, who has identified more than 90 various public transport systems all over the world that have implemented the FFPT principles to some extent [60].

The adoption of the fare-free public transport policy is also used for the marketing purposes to promote the service of the public transport or to support the pro-ecological role of the public transport in the sustainable development [16,17]. Usually, it occurs during special or time-limited events such as car-free days, the European mobility week, and other. In the case of the newly established FFPT policy in Luxemburg this year, Carr and Hesse have noticed that the marketing purpose labelling the FFPT introduction as a pro-ecological step was a dominant narrative in the governmental statements and in the media. However, the core reason for FFPT adoption was to address the transport problems [39].

2. Study Area and Methodology

2.1. Study Area

Frýdek-Místek, a town of 55,931 people [61], belongs to the important urban centre located in a rapidly developing industrial area with many newly established foreign direct investments in the

field of the automotive industry (e.g., Hyundai and other automotive suppliers), on the southern outskirts of Ostrava metropolitan region [62], in the east of Czechia, close to the border with Poland. Frýdek-Místek with its public transportation is part of the integrated public transportation system of the Moravian-Silesian Region. The fare-free public transport policy was implemented in March 2011 as a reaction to 1) the decline in the public transport ridership and revenues from tickets and 2) the growing traffic in the city centre thanks to the lack of bypass which would divert the traffic flows from the centre. The FFPT policy was implemented to increase the ridership and effectivity of the public transport and, at the same time, to offer the residents of Frýdek-Místek benefits due to the lack of critical infrastructure, which is negatively influencing the quality of life in the studied area, as was confirmed by the city authorities during the interviews.

Although the initial plan was to implement the FFPT policy only within the municipal district of Frýdek-Místek, during the policy formulation neighbouring municipalities expressed interest in being included in the fare-free public transport zone [16]. At present, the FFPT zone covers a total of 19 municipalities (Figure 1), the residents of which may benefit from the free-bus pass. It should be mentioned that public transport is free only for the residents registered in the FFPT zone who do not have any debts towards the city. Those residents are obliged to buy annually the fare-free bus pass (price of the yearly pass: 0.04 euro) so that they can be verified on the board and prove that they can benefit from the fare-free service. The town of Frýdek-Místek, which is responsible for the organisation of the public transport within the FFPT scheme, thus has ticket revenues from visitors or people who decided not to use the free-bus pass, as well as in the form of additional funding from the included municipalities and from a higher authority (Moravian-Silesian region), while the Frýdek-Místek FFPT policy has substituted the bus connection organised by the higher authority [16].

As the city authorities confirm, the FFPT implementation together with the ongoing modernisation of the public transport service (e.g., modern bus fleet, interactive timetables, new bus stops, optimization of bus-lines) have positively impacted the public transport usage and resulted in the passenger increase. This supports not only the result of this study, but also the findings of Štraub and Jaroš [16], who also documented the public transport ridership increase, but have raised their doubts over the ability of the FFPT concept to reduce the traffic flow and suggested that further research is needed in order to obtain a detailed evaluation of the FFPT effects on the transport system dynamics.

2.2. Methodology

This research has an exploratory character and is based on the analysis of a concrete FFPT practice in Frýdek-Místek. To understand the effects of the FFPT on the overall mobility strategies and on the dynamics of the transport system where the policy is implemented, interviews with city planning authorities were conducted followed by a survey amongst the residents of the area.

The purpose of the interviews was to get a deeper understanding of the FFPT policy in Frýdek-Místek. In particular, to uncover the local specifics of the examined transport system, which help in designing the survey. For that reason, only the local planners and public authorities were considered for inclusion in this part of the research. Even though the public authorities and planners are not neutral, meaning they are closely connected with the management of the FFPT policy in Frýdek-Místek which could affect their responses by simply hiding the truth, the crucial statements for the study were verified throughout the interviews. In total, 11 interviews with the city planning authorities (e.g., director of the transport and road management department, city architect) were conducted in September 2018. The interviews were semi-structured and organised around critical topics of urban and transport development, as well as mobility patterns of residents. Even though the purpose of the interviews was solely connected with the survey design, some of the insight of city planning authorities was used as an additional explanation of the survey findings to provide a full picture (e.g., the transport system and public transport characteristics in Frýdek-Místek). In such a case, a clarification to which source (survey/interviews) the findings related to has been made.

Figure 1. The fare-free public transport scheme in Frýdek-Místek (Czechia).

After the interviews, a survey with residents of the study area was conducted in the period between 01 October 2018 and 31 December 2018. The main aim of the survey was to examine the mobility patterns of the inhabitants in the study area. Voluntary response sampling was used as a sampling method for survey proliferation and may not be representative. Only the respondents who live in the fare-free public transport zone (Figure 1) were included. The survey was carried out in an electronic and paper version and was distributed through informational channels of the municipality, such as informational tables at the townhouse, short video spot in the regional TV, official web-page of the town or through the Facebook profile, where the direct link to the survey or information where to find the paper version of the survey were placed. The survey contained 17 closed-ended questions connected with socio-demographic characteristics of the respondents, travel habits, public transport, the FFPT concept, and with the quality of the transport system in the study area. In total, 270 questionnaires were collected and analysed where the error margin is 5.95% at the confidence level of 95%, which is considered to be sufficient for the purpose of this exploratory research.

3. Results

The overall characteristics of the transport system and public transport in Frýdek-Místek are described firstly. The effects of the FFPT are presented in Section 3.1.

Figure 2 demonstrates the primary type of transport used by survey respondents. It shows that public transport is used by the majority of the respondents as the primary means of transport (45%, n = 122). The second group is composed of car-drivers who use a car as their primary means of

transport (34%, $n = 91$), and co-drivers (3%, $n = 9$), who also belong into this group. The non-motorised means of transport such as cycling (3%, $n = 9$) and walking (11%, $n = 29$) are the third most common way of transport in Frýdek-Místek according to the respondents. Trains (4%, $n = 10$) were chosen by those respondents who do not live in the Frýdek-Místek and for whom commuting by train is more convenient than by bus, and this means of transport could be labelled as the least important for the respondents. The results show that the service of public transport in Frýdek-Místek plays an important role in the transport system and more detailed look into data (Figures 3 and 4) confirms that such a trend is an outcome of the FFPT implementation, as documented in [16].

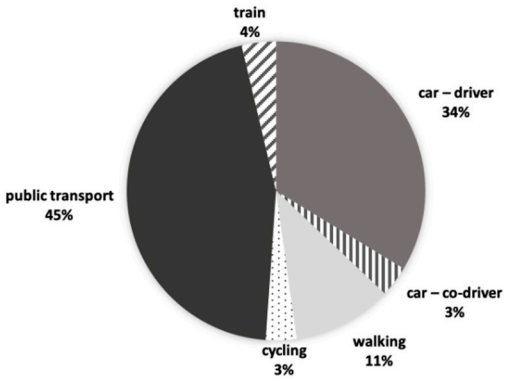

Figure 2. The primary type of transport used by survey respondents.

Even though public transport plays an important role in the Frýdek-Místek transport system (Figure 2), the central part of the city is still heavily congested. According to the survey, the respondents agree that although the city-planning authorities try to support the alternative means of transport to cars (e.g., implementation of the bike-sharing scheme, ongoing modernisation of public transport), the use of cars together with frequent congestions in the central part of the town are common features of traffic in Frýdek-Místek. Especially during peak times, as informed by the respondents, there is no difference in the speed of public transport and cars thus the respondents do not think the town is addressing this issue effectively. Based on the interviews, the city-planning authorities are aware of this problem. The absence of the beltway, which would divert the main traffic flow from the city centre, is worsening the transport planning, as public representatives are afraid to implement more restrictive measures towards car use knowing there are only a few possible routes to travel through the city and restricting them would only worsen it.

Focussing on the perception of the qualitative attributes of public transport in Frýdek-Místek could uncover the positives and negatives of the service. Due to the ongoing modernisation of the bus fleet in Frýdek-Místek, respondents are generally very satisfied with the quality of public transport service, especially the safety and cleanliness on the board of the vehicles, accessibility of the service (bus stops coverage), and the up-to-date informational service. However, the majority of the respondents negatively perceived the off-peak frequency and comfort on the board of the vehicles during the peak times or the willingness of the bus drivers to help during extraordinary situations (e.g., helping with onboarding of people with disabilities, not making stops next to the bus stop platforms to ease the on/offboarding process). The reduced comfort onboard during the peak times is also a reflection of the increased ridership, not only due to generally increased demand for the use of the public transport service during the peak-time but also due to the FFPT implementation. According to the primary public transport users and car drivers, by exploring the perception of the public transport attributes, it can be noticed that public transport users are generally more satisfied with the quality of the service. The car users are more critical towards the public transport service. On the whole, the discrepancies between the perception of the above-mentioned group are only marginal, and it is safe to suggest that, besides the off-peak frequency, the comfort onboard during peak times, and willingness of the staff, the public transport is in good condition. This is also confirmed by the

primary type of transportation used by survey respondents (Figure 2). As for the interviews, the crucial problem of public transport is the professionalism of the bus drivers and its unstable quality, which is caused by frequent fluctuations of the staff according to the public authorities. The public authorities have indicated that this has a negative influence on the quality of public transport. Another public transport challenging issue is the timetable and line optimization. The public authorities agree that the optimization is problematic as people demand better coverage of public transport connections during off-peak periods (e.g., weekends, evenings).

Examining the public transport quality according to the primary means of transport used for day-to-day commuting, in the case of this study the public transport users and car-drivers showed discrepancies. Although the car-drivers use the public transport less frequently than public transport users, the reasoning behind this reflects mainly pragmatic reasons such as flexibility of a car or time saved by the use of a car, rather than individual preferences towards the car and the symbolic value car represents. What the survey also showed is that besides the generally lower use of public transport by car-drivers than public transport users, the majority of car-drivers own the free-bus pass (Table 1). The majority of car-drivers think that the use of cars is faster when moving in Frýdek-Místek, which is in contradiction with what public transport users think. The common feature of public transport users' travel pattern is the use of the service for short distances (up to 3 bus stops), as free-bus pass together with time saved on driving and searching for a parking spot make public transport a perfect candidate for a daily means of transport. However, car-drivers would rather use public transport to travel long distances. The different mobility strategies imprint on car-drivers and public transport users' expectations towards public transport.

Table 1. The main type of transport used by survey respondents according to the fare-free bus pass ownership.

Primary Mode of Transport [1]	Inhabitants with the Fare-Free Bus Pas		Inhabitants Without the Fare-Free Bus Pas	
	[n]	[%]	[n]	[%]
car–drivers	38	21%	53	62%
car–co-driver	7	4%	2	2%
cycling	6	3%	3	4%
walking	18	10%	11	13%
train	8	4%	2	2%
public transport	108	58%	14	16%
total amount of respondents	185	100%	85	100%

[1] The primary mode of transport is based on the survey. Respondents were choosing the transport mode they are using mainly.

3.1. The Effects of the FFPT Policy

It is already well documented that the FFPT implementation was followed by an increase in ridership from 3.802 mil passengers in 2010 (the year before the FFPT was introduced) to 6.9 mil passengers in 2017 [16]. However, the insight on how many people have started using public transport more frequently because of the fare-free scheme and whether the free-bus pass has triggered a modal shift from cars to public transport remained unknown. The added value of the research is that the conducted survey provides valuable insight uncovering the influence of FFPT adoption. As it is demonstrated in Figure 3, the majority of the respondents (n = 108) were using public transport before the FFPT was launched and do not think that the implementation had changed their mobility strategies. Out of them, the majority (59%) are public transport users and the rest is equally distributed among the group of car-drivers (20%) and others (21%; cyclists, pedestrians, train, co-drivers). Knowing that one might conclude that the quality of the service before the FFPT implementation was at a good level. The second biggest group of the survey participants are those respondents who have stated that thanks to the fare-free bus pass they have started to use public transport more frequently (n = 102). Out of

this group, the public transport users represent the largest segment (58%) followed by car-drivers (20%) and others (21%, cyclists, pedestrians, train, co-driver). It confirms the results of the previous FFPT studies, in particular, the fact that the implementation of the FFPT generates more frequent usage of public transport (Figure 4) by the former public transport users and its substitutional effect on pedestrians and cyclists. Nevertheless, the increase in public transport ridership is also caused by the shift from cars to public transport, which is true for 8% of all car drivers taking part in the survey. Those respondents (n = 51) who were using public transport neither before nor after the FFPT was launched are represented by car-drivers (80%) and others (20%, cyclists, pedestrians, train, co-driver). The last group of respondents are those who have stopped using public transport after the FFPT was implemented (n = 9). On the whole, it is natural that the modal split of the survey respondents is diversified. Even though public transport plays a crucial role in the Frýdek-Místek transport system, there are users who prefer different transport options reflecting their needs and preferences. It is important to underline that such preferences towards individual means of transport, according to the survey, are underpinned mainly by pragmatic reasons, such as their flexibility and speed, rather than their symbolic value.

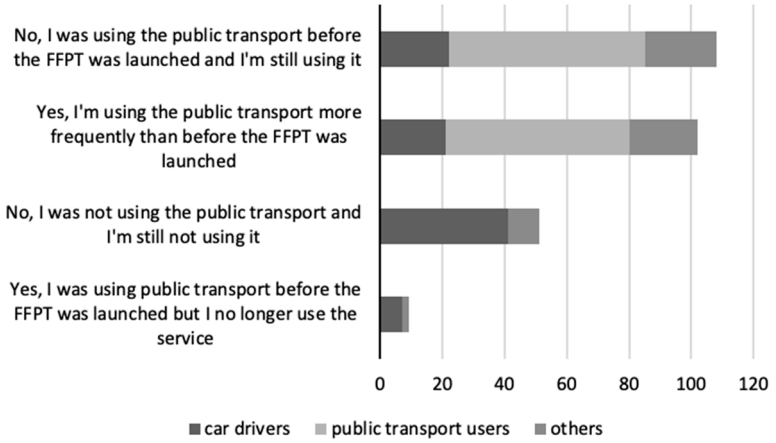

Figure 3. The influence of the fare-free public transport (FFPT) adoption on overall changes in the modal split. Notes: others–pedestrians, cyclists, train users, co-drivers.

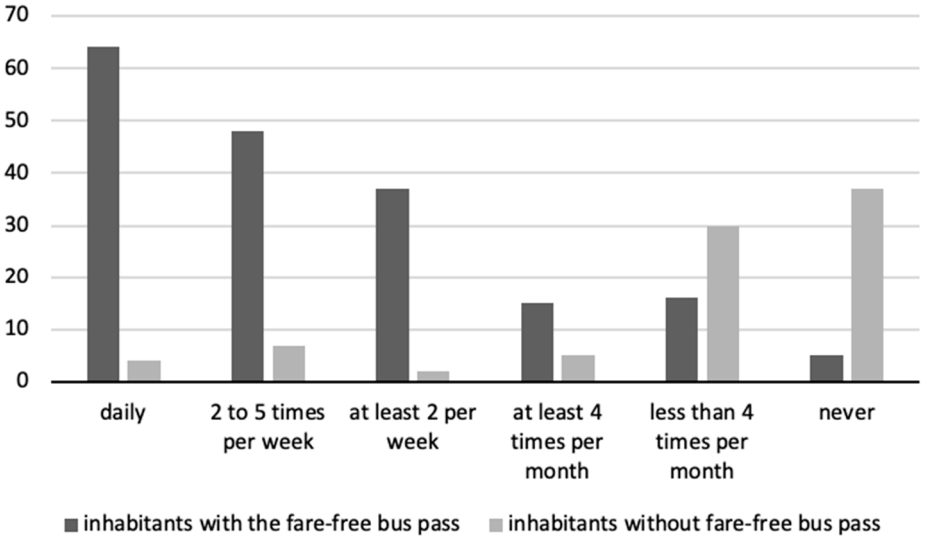

Figure 4. The use of public transport according to the free-bus pass ownership.

The implementation of the FFPT policy, as mentioned above, resulted in a ridership increase as it attracts new users and generates new travels. From Figure 4, it is possible to see that those who own the

free-bus pass use public transport more frequently than those who do not. In Table 1, it is possible to see the composition of respondents with/without the fare-free bus pass according to the primary means of transport used by the survey respondents. Unsurprisingly, the majority of the respondents with the fare-free bus pass are the public transport users (n = 108) followed by car-drivers (n = 38) as the second biggest group, with the other means of transport being in the minority (see Table 1). From those who do not own the fare-free bus pass, the car-drivers (n = 53) are the largest group and public transport users (n = 15) are the second biggest group, followed by the other means of transport (see Table 1). In general, the residents with the fare-free bus pass prevail in the survey. As is indicated by the respondents, new travels are generated because those respondents who possess the fare-free bus pass are using public transport mainly to travel on short distances (up to 3 stops). Also, the new travels are partly generated by the substitution of walking and cycling by public transport (Figure 3). The substitution of walking and cycling together with using public transport more frequently demonstrates the new travels generated by the FFPT policy. As the fare-free public transport zones also cover rural and touristic hinterland of Frýdek-Místek, some respondents claim that they are using public transport to reach the places connected with the leisure activities. However, this type of travels is limited due to the availability and frequency of public transport connections.

Another part of the survey focuses on various characteristics of public transport, such as travel-time (speed), frequency, safety, comfort on the board, feasibility, accessibility, and price. The survey respondents sorted those characteristics according to the most important to the least important by grading them on the scale from 1 to 7 (each factor has a unique grade for each respondent). This allows for presenting the results in the form of a pyramid (Figure 5), where the order of the factors in the pyramid demonstrates its influence on the respondents' attitudes towards the public transport service in Frýdek-Místek and partially reflect the quality of the transport system in the city. Those factors, which are at the top of the pyramid were graded as the least important and those at the bottom of the pyramid as the most important. It shows that price represents a strong element in respondents' attitudes, but due to the fare-free bus pass, it is not taken into a consideration. What turned out to be crucial for the respondents was safety, travel-time (speed), and frequency. The order of the pyramid demonstrates the quality of the public transport service in Frýdek-Místek, where the high priority of safety results from the dissatisfaction with the professionalism of the bus drivers, which was also confirmed by the policy-planning authorities during interviews, and increasing traffic intensity in the city centre. The position of travel time (speed) and frequency reflects the problematic traffic situation in Frýdek-Místek. It suggests that the travel time in a frequently congested town is an important element of the decision-making process and the respondents are making their decisions based on what is currently the fastest option making it possible to get from point A to B. The position of attributes such as comfort, feasibility, and accessibility in the pyramid suggests that the public transport service in Frýdek-Místek is a reliable travel alternative offering good conditions. It also confirms the stance of [16] and public authorities who stated during the interviews that the public transport service is being frequently modernised.

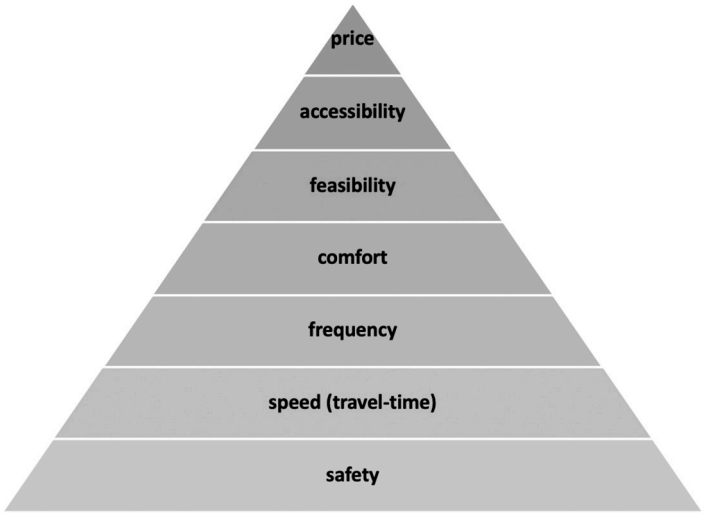

Figure 5. Public transport attributes according to the survey respondents.

4. Conclusions

The FFPT policy implementation in Frýdek-Místek results in increasing public transport ridership, which this study confirms. According to the survey, the increased ridership is caused mainly by more frequent use of public transport by former public transport users, the substitution of the walking and cycling by public transport, and also by motivating car-drivers to shift from car to public transport. The FFPT policy is thus a suitable instrument which is changing the mobility strategies.

This study suggests that those respondents who possess the fare-free bus pass are using public transport more frequently than those who do not own the fare-free bus pass (Table 1, Figure 4). In particular, using public transport for shorter distances (up to 3 bus stops) is the new pattern of public transport users in the system with the FFPT. Also, the public transport with the fare-free bus pass might be attractive for those, who would rather walk or ride a bike which results in growing share of public transport users and lowering the share of pedestrians and cyclist in the Frýdek-Místek. The primary type of transport, according to survey respondents, supports this suggestion as 45% of the respondents are public transport users, with 3% as cyclists and 11% as pedestrians (see Figure 2). The public transport in Frýdek-Místek has a potential to increase the ridership in off-peak periods since the fare-free public transport zones also cover the rural hinterland of the city, reaching environmental landmarks where leisure activities are taking place or providing an evening connection between the city centre and settlements in the hinterland. The demand for such a connection exists but current public transport availability limits it. As confirmed during the interviews, the city authorities are aware of this problem and are searching for a solution to better public transport optimization in off-peak periods.

Surveys also uncover the sketch of respondents' attitudes toward public transport in the FFPT system (Figure 5). The price does not represent an important element in the decision-making process for this study respondents, but safety, travel-time (speed), and public transport frequency does. The reason why safety plays an important role is due to dissatisfaction with the professionalism of the bus drivers. This was also mentioned during the interviews with the policy-planning authorities, and as they have suggested, it is a result of staff fluctuation. The travel-time (speed) together with the public transport frequency might reflect the problematic traffic situation in the congested city centre or potential gaps in the timetables, which might be an important, especially during the off-peak periods.

As this study shows, the FFPT turned out to be a suitable transport policy to increase public transport ridership and to motivate car-drivers to shift from car to public transport. As is indicated from the results, there are car drivers who completely shifted to public transport or at least own the fare-free bus pass. On the whole, the FFPT policy alone is not efficient enough to reduce the traffic flows and solve the problems with traffic congestions.

5. Discussion

The problem of the sustainable development of urban transport systems results from the growing mobility and transport demands of the society, which frequently constitutes a subject of disputes among scholars or policy-makers. As a result of this study, it was found that the implementation of the fare-free public transport policy represents an incentive changing the ongoing mobility strategies and generating new ones. Although there is a consensus in the academic debate that people prefer using non-motorised means of transport when travelling short distances, like doing groceries, visiting a doctor, etc. [63], this is not true for the systems with abolished fares, which is an added value of the research. In cases where people have an option to use the free-bus pass, like in Frýdek-Místek, walking and cycling are being substituted by public transport, which confirms the findings of [34,49]. According to the critics of FFPT, this substitutional effect generates useless mobility which lowers the rationality of FFPT adoption [17,18]. However, it has to be kept in mind that the substitution of walking and cycling is reducing the risk of road accidents [49], which in the case of collision between a pedestrian or a cyclist with a car is usually in favour of the car. Increasing safety on the roads is thus a positive effect of FFPT in transport systems with increased car traffic as is the one in Frýdek-Místek. Yet, the policy planning authorities have to ask themselves a more fundamental question, whether FFPT adoption is the best solution to increase safety on the roads.

Coming back to the previously mentioned substitutional effect of the FFPT in regard to walking and cycling, the implementation does not mean people will use it only to travel on short distances. By supporting the views of De Witte et al. [64], the results of this study survey show that people are also using public transport to reach the places where they undertake their leisure activities, as the fare-free zone in Frýdek-Místek covers not only the urban area of the town but also its rural hinterland. However, in the case of Frýdek-Místek, people are limited by the offer of line connections to such places, which shows the public authorities a possible direction for improvement of the public transport service.

The result of the survey agrees with [16,17,22,23] that FFPT is a suitable tool for increasing public transport ridership. The uncovered modal split of new public transport users who have started using the service after FFPT implementation confirms that the fare-free bus pass encourages mainly former public transport users, but also car drivers. Even though the car drivers are a minority among new public transport users, similar to the results of Cats et al. [34] or Storchmann [49], the added value of the study is that the survey uncovers that 41% of car drivers own the fare-free bus pass, which is a positive finding. As the results of this survey show, those who have the fare-free bus pass use public transport more frequently than those who do not. The FFPT project in Frýdek-Místek is thus attracting car drivers, however, the decrease in the traffic flows is not occurring. Currently, it is important for the city-planning authorities to better understand the needs of car drivers because, as is indicated in work of Thøgersen [44], Redman et al. [65], and other studies focusing on travel behaviour of car-drivers [45,46,66,67], drivers who have experienced the fare-free public transport are more likely to change their travel behaviour. Knowing their needs would help to accommodate such a trend in the long-term and would get the Frýdek-Místek transport system closer to its sustainable development. The fact that the symbolic value of a car or lifestyle connected with car ownership constitutes minor reasons for driving a car among the respondents of the survey, confirming the findings of De Witte et al. [64], which is in favour of such a trend developing in Frýdek-Místek in author's opinion.

Although FFPT increases public transport ridership, it does not mean that public transport will be used by everyone. The results of the study indicate that there are other transport alternatives in Frýdek-Místek, which people are satisfied with, even though the situation in the transport system of the town is problematic. Due to mobility strategies being connected to the purpose of the journey [64], it may be naturally necessary for someone to use a different means of transport in a given situation, rather than using public transport. Moreover, according to the study, there are places within Frýdek-Místek where the accessibility by public transport or other means of transport differs, especially due to congestions in the central part of the town, which also leaves an imprint on the mobility strategies chosen by the survey respondents.

Another added value of this study is the notion of how the fare-free bus pass has changed the way how the respondents perceive public transport attributes. Unsurprisingly, in the case of Frýdek-Místek, prices of the public transport tickets are not important for the respondents, which confirms the overall key role of the price in the decision-making process, as illustrated by Redman et al. in the literature review on quality attributes of public transport [65]. The attributes which have turned out as a crucial in Frýdek-Místek are safety, travel time (speed), and public transport frequency, which, in author's opinion, is a reflection of the traffic situation in the town. It is true that the city planning authorities have succeeded in the ridership increase in public transport. Currently, it is important to focus on other attributes of public transport in order to increase the satisfaction of the residents of Frýdek-Místek with public transport, follow the ridership increase, in the long-term horizon or at least to preserve the ongoing modal-split, where public transport plays an essential role and is an important goal for enhancing the sustainable development.

When it comes to the intentions of the city-planning authorities to reduce the car traffic in the central part of the town by implementing the fare-free principles, the study shows that although FFPT encourages more drivers to use the public transport service, the traffic intensity remains the same. This is due to the lack of transport infrastructure, which would divert the transit mainly from the city centre. The fare-free public transport policy is only one tool out of a plethora of other transport (dis)incentives, which policy planners could use for transport and urban planning to promote sustainable development. Various urban and transport problems require different solutions, which should respect the complexity of the problem. FFPT, as the study indicates, is a suitable tool for improving the mobility of citizens and increasing the ridership in public transport, however, it is not enough to address the system-wide problems, such as missing transport infrastructure with growing car-use.

Although the intentions to implement FFPT in Frýdek-Místek reflect the willingness of the city-planning authorities to increase the quality of life of the residents, the transport-oriented approach consisting in addressing public transport ridership and increasing traffic flows prevails. The question of whether the fare-free public transport policy is also used to address the social issues so that the issue of sustainable development can be fully covered remains without an answer. Knowing the fact that only the residents without a debt towards the municipality can obtain the fare-free bus pass, further research should explore *if* and *how* FFPT adoption tackles the empowerment of mobile wealthy and immobile poor [10].

Funding: This research was funded by The Doctoral School of Social Science and the Priority Research Area Society of the Future under the program "Excellence Initiative – Research University" at the Jagiellonian University, Cracow.

Conflicts of Interest: The authors declare no conflict of interest.

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